**Before the**
**Federal Communications Commission**
**Washington, D.C. 20554**

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| In the Matter of | ) | |
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| Amending the Definition of Interconnected VoIP Service in Section 9.3 of the Commission's Rules | ) | GN Docket No. 11-117 |
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| Wireless E911 Location Accuracy Requirements | ) | PS Docket No. 07-114 |
| | ) | |
| E911 Requirements for IP-Enabled Service Providers | ) | WC Docket No. 05-196 |
| | ) | |

**COMMENTS OF APCO INTERNATIONAL**
**IN RESPONSE TO**
**SECOND FURTHER NOTICE OF PROPOSED RULEMAKING**

The Association of Public-Safety Communications Officials-International, Inc. ("APCO") hereby submits the following comments in response to the Commission's *Second Further Notice of Proposed Rulemaking*, FCC 11-107 (released July 13, 2011) ("*Second FNPRM*") in the above-captioned proceedings.[1] The *Second FNPRM* seeks comments on issues related to E911 rules for "outbound-only" interconnected VoIP service providers, automatic location requirements for interconnected VoIP services, location-capable broadband voice technologies, and improving indoor location accuracy for wireless services.

Founded in 1935, APCO is the nation's oldest and largest public safety communications organization. Most APCO members are state or local government employees who manage and operate communications systems -- including Public Safety Answering Points (PSAPs), dispatch centers, radio networks, and information technology -- for law enforcement, fire, emergency

[1] The *Second FNPRM* was released on July 13, 2011, in a Commission document titled "*Notice of Proposed Rulemaking, Third Report and Order, and Second Further Notice of Proposed Rulemaking*."

medical, forestry conservation, highway maintenance, disaster relief, and other public safety agencies. APCO has long been involved Commission proceedings regarding 9-1-1 capability and other aspects of public safety communications.

APCO's guiding principle in response to the *Second FNPRM* is the public's current expectation that, if they can make a "outbound" telephone call, they can reach 9-1-1. The VoIP industry has gone to great lengths to make their service offerings look, feel, and sound like any other telephone service. That, in turn, leads the public to believe that any device that can make a telephone is able to reach 9-1-1 and provide the same automatic location and call-back information as traditional wireline phone services. The fact that a 9-1-1 call is through an "outbound-only" interconnected VoIP service is transparent to the caller. Therefore, the Commission's rules and VoIP service providers must move forward as quickly as possible to make public perception a reality.

More generally, wireline, VoIP and wireless communications providers need to recognize the need to provide timely and *accurate* location information in emergency situations, regardless of the device or the nature of the location from which a 9-1-1 call is made.

## A. Applying E911 Rules to Outbound-Only Interconnected VoIP Service providers

The Commission's current 9-1-1 rules apply only to those VoIP services that permit users "to receive calls that originate on the PSTN *and* to terminate calls on the PSTN."[2] At the time the rules were adopted, in 1995, "outbound-only" VoIP service was used by a very small number of telephone subscribers nationwide. However, as the Commission notes, "outbound-only" interconnected VoIP services have been growing rapidly in recent years and now have as many

[2] *Second FNPRM* at ¶40 (emphasis added); 47 C.F.R. §9.3.

subscribers (4.2 million) as did two-way interconnected VoIP providers in 1995.[3] Customers have the ability to make outbound calls to the PSTN through such VoIP services and reasonably expect that capability to include the ability to call 9-1-1. Therefore, APCO strongly supports extending 9-1-1 requirements to providers of "outbound-only" VoIP services.[4]

An alternative requirement that VoIP providers include "point-of-sale" warnings that 9-1-1 service is not available would not be an acceptable solution. A VoIP service purchaser's need to call 9-1-1 may occur long after the sale, when any disclaimers regarding 9-1-1 are at best a distant memory. Moreover, the individual placing the 9-1-1 call may not be the same person who made the original service purchase. It could be a family member, friend, employee, or customer at the location at which the emergency is occurring. Labeling is equally ineffectual, as labels are not always attached and can be lost or damaged, and some VoIP services are easily transferred to multiple devices.

The consumer "user experience" does not differentiate between, on one hand, an outbound-only VoIP service that functions over a dial-up connection, and on the other hand, an outbound-only VoIP service that functions over a broadband connection. Therefore, APCO urges the Commission to modify its definition of interconnected VoIP service to specify an "Internet connection" rather than a "broadband connection" as the defining feature. The user experience also does not differentiate whether or not their interconnected VoIP service is using the circuit-switched PSTN to connect or receive telephone calls. The Commission should seek to incorporate references such as E.164, the approved telephone numbering plan format, within

[3] *Second FNPRM* at ¶46.

[4] APCO does not believe it necessary at the present time to extend requirements to inbound-only services that do not create an expectation that outgoing calls will be connected to the PSTN.

its definition to provide appropriate clarity and reflect the needs of consumers who expect to be able to make an emergency call.

Call-back capability is a critical element of any 9-1-1 service as it allows the emergency call-taker to reconnect when a 9-1-1 call is disconnected or dropped for whatever reason. APCO assumes that, at minimum, a VoIP provider that has implemented call-back mechanisms for non-emergency purposes could also provide call-back capability for 9-1-1 calls. APCO is not prepared to assess the cost or technical feasibility of providing such capability. However, those issues must be weighed against the very real danger to consumers of VoIP services if they dial 9-1-1 and lose their connection. Maintaining the current "mix" of capabilities for call-back mechanisms creates confusion for the consumer who has come to expect that a PSAP will call them back if they "hang up" after dialing 9-1-1. It also places them in potential danger if they are unable to convey necessary information prior to dropping the call.

The Commission seeks comment on the appropriate manner to calculate the benefits that would result from extending 9-1-1 service requirements to outbound-only interconnected VoIP services. However, those benefits are intangible and difficult to quantify. APCO is unaware of any readily available measurements or data that would provide an accurate quantification of the benefits to be achieved by the proposed rules. However, as noted below with regard to automatic location requirements, APCO is prepared to work with the Commission to identify potentially useful data. What is clear is that a failed attempt to dial 9-1-1 on a VoIP telephone could have devastating results if it delays or prevents an emergency response.

There are a growing number of individuals who are relying on IP-based communication methods. Lessening the confusion that plagues these citizens with regard to methods by which they can communicate with 9-1-1 will produce positive results. The FCC recently released tips

for the public on how to better prepare themselves for potential natural disasters. Many of these tips focused on the ability to communicate effectively and how to make the best use of wireless and IP-based services. Providing a consistent regulatory framework for 9-1-1 service requirements as it relates to VoIP is a critical component in empowering citizens to be as well prepared as they can be during an emergency.

**B. Automatic Location Requirements for Interconnected VoIP Services**

Traditional wireline services and wireless service providers are required to provide automatic location information to PSAPs with each 9-1-1 call. No manual caller intervention is required. This ensures the accuracy of the location information (subject, in the case of wireless, to the accuracy of the location technology being employed), prevents fraud, allows for immediate call-routing to the correct PSAP, and greatly expedites the ability of call-takers to gather necessary information and dispatch appropriate first responders to the site of the emergency. In contrast, VoIP services currently covered by the Commission's 9-1-1 rules need only provide a mechanism for subscribers to enter their location manually. Reliance upon such manual location entry by VoIP customers, while better than nothing, is often ineffectual and sometimes harmful, as discussed in comments previously submitted to the Commission.[5]

The *Second FNPRM* notes that providing automatic location information for VoIP services may be difficult, and is particularly complicated when there is an "over-the-top" VoIP service provider that is different from the entity providing the underlying Internet connectivity to the subscriber.[6] Thus, the Commission seeks input on whether it should adopt general location accuracy governing principles that could be applied to interconnected VoIP service providers and

[5] *See Second FNPRM* at ¶62.

[6] *Second FNPRM* at ¶71.

over-the-top VoIP service providers, but that would allow both types of providers the flexibility to develop technologically efficient and cost-effective solutions. APCO tentatively agrees that such a flexible approach may be the most expedient method to deliver automatic location information for VoIP calls to 9-1-1.

However, it is critical that the Commission maintain a strict standard of performance to ensure that the VoIP industry and other relevant parties develop and implement effective solutions as quickly as possible. This is not a new concern and should not be a surprise to the VoIP industry. The need to provide accurate location information for VoIP-initiated 9-1-1 calls has been a focal point within public safety and industry discussions for many years. Among other steps, the Commission should continue to seek the valuable input of CSRIC.

The Commission must also distinguish the new format of automatic 9-1-1 location information from the legacy term "ALI." As we move forward with IP-based emergency communications and NG9-1-1 systems as described in the NENA i3 architecture, location will be dynamically delivered to PSAPs via Presence Information Data Format-Location Objects (PIDF-Lo). The legacy term "ALI" references location is derived from static databases that associate telephone numbers with specific pre-determined locations. APCO acknowledges that there will be a lengthy national transition period to NG9-1-1, but encourages the Commission to review its use of location terminology in future proceedings as the choice of terms in this regard could have significant impact on compliance.

There will frequently be circumstances where over-the-top VoIP service providers have a direct connection to consumers, but do not have information about the user's location. The broadband or Internet provider may be aware of the consumer's location based on the access point being used, but may not be aware of when the consumer is placing an emergency call. It is

critical in these situations that all involved service providers work together to provide accurate, dynamic 9-1-1 location. The Commission will also need to consider the new methods of location acquisition related to NG9-1-1 in addition to the E9-1-1 methods in use today. The current charter for the newly formed CSRIC Work Group 3 on Location Accuracy includes an assessment of new technologies and will be exploring the issues raised in this *Second FNPRM*.

The Commission seeks information regarding the quantitative benefits of providing automatic location information for VoIP 9-1-1 calls. Precisely quantifying issues such as the extent to which emergency personnel are deployed to incorrect locations, and the difference in response times for calls initiated from interconnected VoIP service providers versus wireline and wireless service providers, will require significant objective data from geographically diverse public safety agencies and PSAPs. At this time, few if any PSAPs include this type of data in their routine call analysis. APCO would be happy to work with the Commission to determine the best path forward to obtain objective data that could then be used as relevant criteria in the future. As noted above, however, APCO cautions against placing undue reliance on quantifying the intangible benefits of improving 9-1-1 service to the public.

Finally, the Commission addresses potential privacy concerns with requiring automatic location information for certain VoIP calls. Privacy has been a concern since the inception of 9-1-1, though it is generally accepted that citizens give up their right to location privacy when they dial 9-1-1 to seek emergency assistance. APCO believes that the Commission should consider whether a similar "implied consent" concept applies to 9-1-1 calls made through interconnected VoIP providers.

## C. Location-Capable Broadband Voice Technologies

The Commission seeks comment on whether it should encourage mobile service providers to enable the use of commercial location-based services for emergency purposes. APCO encourages the Commission to evaluate the report to be provided by CSRIC on this issue before making any decision on how to leverage device-based location capabilities.

## D. Improving Indoor Location Accuracy

APCO concurs that indoor location accuracy is a significant public safety concern that requires development of indoor technical solutions and testing methodologies. As we have often noted, the growing number of citizens who are "cutting the cord" means that a greater number of wireless 9-1-1 calls will be made from inside residential and business locations. Finding those indoor emergencies, absent accurate location information, can be a particular challenge. While APCO acknowledges that there are significant technical and practical issues related to indoor testing that preclude new rules at this time, we urge the Commission to encourage all parties to move forward aggressively to identify appropriate technologies and testing methodologies. The Commission should look to CSRIC and to the industry's work to date on this issue to formulate a strategy forward. The ATIS/ESIF standard "*Approaches to Wireless E9-1-1 Indoor Location Performance Testing* (ATIS-0500013) published in February 2010, presents guidelines for assessing the performance of wireless location technologies. APCO and other representatives from public safety participated in the development of this industry standard and encourages the Commission to consider this work in its evaluation of the issue.

## E. Wi-Fi Positioning and Network Access Devices

Wi-Fi positioning is not currently used for emergency calls. However APCO concurs that this issue should continue to be investigated by the Commission. Increasing numbers of mobile phones are being sold with Wi-Fi capability and it is logical to assume that the public will soon expect access to emergency calling via this capability. APCO does not support Wi-Fi as being a replacement for other established 9-1-1 location technologies, but acknowledges that it has potential to complement these technologies. APCO encourages the Commission to become familiar with the location acquisition functional elements as described in the NENA i3 architecture, especially as it pertains to the implementation of Location Information Servers (LIS). The LIS is a critical component in achieving the integration of Wi-Fi positioning into NG9-1-1 systems. APCO is not aware of any effective method to integrate Wi-Fi positioning into current E9-1-1 ALI capabilities. APCO encourages the Commission to "set the bar high" with regard to the pace at which industry works to develop and deploy standards and solutions for Wi-Fi based 9-1-1 location.

## CONCLUSION

APCO appreciates the opportunity to provide its input in response to the *Second FNPRM* and urges the Commission to adopt rules and policies consistent with the comments set forth above.

Respectfully submitted,

APCO INTERNATIONAL

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